

REMARKS

Upon entry of this Response, claims 9 and 11-30 are pending. By way of this Response, claims 1-8 are cancelled; claims 9 and 11 are amended; and claims 19-30 are added. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Allowable Subject Matter & New Claims 19-24

Applicants thank the Examiner for indicating that claim 13 would be allowable if rewritten in independent form to include all of the limitations of its base claim and any intervening claims. Claim 13 depends directly from claim 9.

For at least the reasons discussed below, Applicants respectfully submit that independent claim 9 includes the allowable subject matter.

Restriction Requirement

The undersigned respectfully submits that the Restriction Requirement, mailed July 16, 2007, may have contained couple of typographical errors. In particular, the Restriction Requirement held that there were two claim groups (Group I: claim 1-7; and Group II: claims 8-16) and four (4) claimed species/embodiments: embodiment 1 (Figures 1 and 2) corresponding to claims 8-13; embodiment 2 (Figure 3) corresponding to claims 1-7; embodiment 3 (Figure 4) corresponding to claims 1-7 and 14-16; and embodiment 4 (Figure 5) corresponding to claims 1-7 and 14-16.

As first noted by prior counsel, claim 8, which depends from claim 1, should belong to Group 1. (See Response, mailed January 4, 2008, page 7.)

In addition, the undersigned believes that the reference to Figure 1 with respect to Embodiment 1 may have been a typographical error. At the time of the Restriction Requirement, claim 1 and claim 9 were the only independent claims. At that time, claim 1 recited, *inter alia*, “planar spiral windings including a winding [in] an ‘eight’ shape with a first loop and a second loop.” Similarly, claim 9 recited, *inter alia*, “a winding having a first loop and a second loop.” Figure 1 is a representation of a prior art planar inductance structure. Figure 1 fails to show first

and second loops, as recited in the independent claims at the time of the Restriction Requirement.

So as to remove any ambiguity from the record, the undersigned respectfully requests clarification as to whether the Examiner considers Embodiment 1 to correspond to Figure 2 or to Figures 1 and 2.

In Applicants' Amendment, mailed January 4, 2008, prior counsel referenced Figure 1 in arguing against the Restriction Requirement. The undersigned notes that prior counsel referenced Figure 1 in conformity to the Restriction Requirement, i.e., in a discussion of Embodiment 1. The undersigned respectfully submits that reference to Figure 1 by prior counsel was in apparent error and cannot be construed as an admission by Applicants.

With respect to claims 14-16, each one of the claims includes limitations shown in Figure 2. In particular with respect to claim 14, Figure 2 shows "cross conductors 6-8" that carry current in the same direction. (See, paragraph [0013].) Figure 2 shows the "cross conductors 6-8" are substantially parallel, as recited in claim 15. (See, paragraph [0013].) Figure 2 shows an upper loop carrying current in a counter-clockwise direction and a lower loop carrying current in a clockwise direction. Therefore, Applicants respectfully request that the restriction of claims 14-16 be withdrawn.

For the record, Applicants respectfully submit that claim 9 is generic to claims 2-5. All limitations recited in claim 9 are shown in each one of Figures 2-5.

Rejections Under 35 U.S.C. § 112

Claim 18 stands rejected under 35 U.S.C. § 112, second paragraph, for allegedly failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. In particular, the Office Action stated that claim 18 appears to be a negative limitation.

Applicants respectfully submit that no amendment is necessary. Negative limitations are not "inherently ambiguous or uncertain." MPEP 2173.05(i). Applicants respectfully submit that the bounds of claim 18 are clearly ascertainable to one of ordinary skill in the art. Therefore, Applicants respectfully request that the rejection of claim 18 be withdrawn.

Rejections Under 35 U.S.C. § 103

Claims 9, 11 and 17-18 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,245,307 to Klaus et al. (hereinafter “Klaus”) in view of U.S. Patent No. 5,572,170 to Ito et al. (hereinafter “Ito”). The Office Action relies on Klaus for allegedly disclosing a planar inductance device and cites Figures 1-3 for showing the same. The Office Action admits that Klaus fails to disclose Applicants’ claimed power lines and relies on Ito for curing the deficiencies of Klaus.

Claim 9 recites, *inter alia*, “a pair of power supply lines extending along opposite sides of the second loop, a first power supply line of said pair of power supply lines connected to the first loop and a second power supply line of said pair of power supply lines connected to the second loop.”

Applicants respectfully submit that Klaus and Ito fail, individually and collectively, to disclose, teach, or suggest at least the aforementioned limitation. The Office Action relies on Klaus for allegedly disclosing a planar inductance device and cites Figures 1-3 for showing the same. The Office Action admits that Klaus fails to disclose Applicants’ claimed power lines and relies on Ito for curing the deficiencies of Klaus.

In particular, the Office Action states, at page 3, that Ito “discloses a planar coil structure comprising a plurality of conductive loops [A, B, C, D] and a plurality of power supply lines [A2, A4, B2, B4, C2, C4, D2, D4], wherein a pair of power supply lines [A2, B2] extending from opposite side of one of the loops [A], a first power supply line connected to one loop [B] and a second power supply line [A2] connected to one of the loop [A].”

Applicants respectfully submit that Ito fails to disclose Applicants’ claimed power lines. In particular, Ito discloses an integrated thin film transformer that is comprised of four thin film transformers [A-D]. Each one of the four thin film transforms has a respective primary coil and a respective secondary coil. (Column 9, lines 29-34.) The respective primary coils and respective secondary coils are spiral coils. (Column 9, lines 34-38.) The primary coils have inputs [A1, B1, C1, D1] and outputs [A3, B3, C3, D3]. (Column 10, lines 18-41.) The secondary coils have inputs [A2, B2, C2, D2] and outputs [A4, B4, C4, D4]. (Column 10, lines 18-41.) Thus, Applicants respectfully submit that the secondary coil inputs [A2, B2] cited by the Office Action are not “power lines.”

Therefore, Klaus and Ito, individually and collectively, fail to disclose, teach, or suggest at least the aforementioned limitation. Therefore, Applicants respectfully request that the rejection of claim 9 be withdrawn.

In addition, Applicants respectfully submit that one of ordinary skill in the art would not modify Klaus to include power lines extending alongside of a loop because of inductance between the power lines and the loop. Inductance between the loop and the power lines can be avoided by extending the power lines perpendicularly from the plane containing the loop.

Newly Added Claims

Applicants have added independent claim 19 having dependent claims 20-24 and independent claim 25 having dependent claims 26-30.

Newly added claim 19 generally corresponds to claim 9 and its dependent claims 20-24 generally correspond to claims 11-13 and 17-18, respectively. Limitations recited in claim 19 are shown in Figures 2-5.

Newly added claim 25 recites limitations shown in Figures 2-5.

Applicants respectfully submit that independent claims 19 and 25 are allowable over Klaus and Ito for at least the reasons discussed below. In particular, Klaus and Ito fail, individually and collectively, to disclose, teach or suggest limitations recited in the aforementioned claims.

Claim 19 recites *inter alia*, “a winding having a first loop and a second loop and having a cross-conduction area having a unidirectional current path, the first loop and the second loop having oppositely directed current paths, the cross-conduction area connecting the first loop and the second loop and crossing a portion of the first loop and a portion of the second loop, wherein the crossed portion of the first loop and the crossed portion of the second loop are approximately at opposite sides of the cross-conduction area.”

Applicants respectfully submit that Klaus and Ito fail, individually and collectively, to disclose, teach, or suggest a “cross-conduction area connecting the first loop and the second loop and crossing a portion of the first loop and a portion of the second loop, wherein

the crossed portion of the first loop and the crossed portion of the second loop are approximately at opposite sides of the cross-conduction area,” as recited in claim 19.

In particular, Figure 1 of Klaus shows that the windings 26 that are between partial coils 28 and 30 are parallel. The windings do not cross. Thus, Figure 1 fails to show “the crossed portion of the first loop and the crossed portion of the second loop are approximately at opposite sides of the cross-conduction area.”

Figure 2A of Klaus shows a cross over region (i.e., through plated holes 52', 52'', 52''') proximal to the right hand side of the conductor band 24. Figure 2A fails to show “the crossed portion of the first loop and the crossed portion of the second loop are approximately at opposite sides of the cross-conduction area.”

Figure 3 shows an embodiment in which there are through holes 52 at the top of an upper loop and the bottom of a lower loop. Figure 3 fails to show “the crossed portion of the first loop and the crossed portion of the second loop are approximately at opposite sides of the cross-conduction area,” wherein the cross-conduction area connects the first loop and the second loop.

Applicants respectfully submit that Ito fails to disclose, teach, or suggest at least the aforementioned limitation of claim 19.

Consequently, Klaus and Ito fail, individually and collectively, to disclose, teach, or suggest each limitation of claim 19. Therefore, Applicants respectfully submit that claim 19 is allowable over Klaus and Ito.

Independent claim 25 recites, “a single crossover-conductor crossing a left hand side portion of the first non-circular winding and crossing right hand side portion of the second non-circular winding, the single crossover-conductor electrically connecting a left hand end of a conductor track of the first non-circular winding to a right hand conductor track of the second non-circular winding.”

For at least the reasons provided above, Applicants respectfully submit that Klaus and Ito fail, individually and collectively, to disclose, teach, or suggest at least the aforementioned limitation of claim 25. Therefore, Applicants respectfully submit that claim 25 is allowable over Klaus and Ito.

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All of the claims remaining in the application are now clearly allowable.
Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,
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